

COMPOSITIONS FOR THREE-DIMENSIONAL PRINTING OF SOLID OBJECTS

ABSTRACT OF THE DISCLOSURE

A three-dimensional printing materials system and method can produce both
5 appearance models and small numbers of functional parts in an office environment.
The method can include building cross-sectional portions of a three-dimensional article,
and assembling the individual cross-sectional areas in a layer-wise fashion to form a
final article. The individual cross-sectional areas can be built by using an ink-jet
printhead to deliver an aqueous solvent or binder to an adhesive particulate mixture,
10 causing the particles of the mixture to adhere together, and to previous cross-sectional
areas. The binder can include at least one of nonaqueous organic monomeric
compound, anionically ionizable polymer, cationic polymer, polymer, waterborne
colloid, or inorganic solute.